

1. (previously presented) An ultrasonic diagnostic imaging system which acquires images of differently oriented image planes of a patient in rapid succession comprising:

a probe including a two dimensional array transducer;

a beamformer, coupled to the array transducer, for scanning beams over a variety of different directions and inclinations with respect to the array transducer;

a beamformer controller programmable to scan beams over differently oriented image planes in a sequence of image planes until acquisition of the image planes has been completed;

an image processor coupled to the beamformer;

a display coupled to the image processor;

a plane orientation control, coupled to the beamformer controller, for adjustment of the orientation of an image plane relative to selected anatomy;

a storage device responsive to the plane orientation control and operative to store a parameter of image plane orientation selected by operation of the plane orientation control; and

an acquisition control, coupled to the beamformer and responsive to the stored parameter, for initiation in a diagnostic exam of the acquisition of a sequence of image planes in the selected orientation with respect to the selected anatomy.

2. (original) The ultrasonic diagnostic imaging system of Claim 1, further comprising a source of patient heart waveforms coupled to the beamformer controller.

3. (original) The ultrasonic diagnostic imaging system of Claim 1, wherein the image processor further comprises a contrast agent image processor.

4. (previously presented) The ultrasonic diagnostic

imaging system of Claim 1, wherein the plane orientation control further comprises a manually operated user control; and wherein the storage device further comprises:

a storage device for storing scanning parameters for a plane orientation selected by the user control.

5. (previously presented) The ultrasonic diagnostic imaging system of Claim 4, further comprising a plurality of imaging parameters which may be adjusted by a user; and wherein the storage device further comprises a storage device for storing adjusted imaging parameters.

6. (original) The ultrasonic diagnostic imaging system of Claim 5, wherein the beamformer controller is responsive to stored scanning parameters and imaging parameters upon activation of the acquisition control.

7. (currently amended) A method for operating the ultrasonic diagnostic imaging system of Claim 1 to performing the acquisition of ultrasonic images of a plurality of differently oriented image planes in rapid succession comprising:

aiming a first image plane of a two dimensional array probe through an acoustic window of a body;

reaiming the image plane through the acoustic window by use of the plane orientation control to image a second image plane of a different orientation than the first image plane;

storing information defining the orientation of the second image plane in the storage device; and

initiating a sequence of image acquisition which acquires an image of the first image plane followed by an image of the second image plane by use of the stored information.

8. (original) The method of Claim 7, wherein reaiming further comprises reaiming the image plane through the same

acoustic window as that of the first image plane.

9. (currently amended) The method of Claim 8, further comprising storing information defining the orientation of the first image plane in the storage device,

wherein initiating further comprises using the stored information of the first image plane.

10. (original) The method of Claim 7, further comprising infusing the body with an ultrasonic contrast agent.

11. (original) The method of Claim 10, further comprising, following infusing, applying stress to the body and,

following applying, repeating the initiating step.

12. (original) The method of Claim 10, wherein the body comprises the heart and wherein the myocardium of the heart is infused with the contrast agent.

13. (original) The method of Claim 12, wherein, in the aiming and reaiming steps, the first image plane comprises one of an AP4, AP2, or AP3 view of the heart, and the second image plane comprises a different one of an AP4, AP2, or AP3 view of the heart.

14. (original) The method of Claim 7, further comprising adjusting an image parameter after at least one of the aiming and reaiming steps; and

storing the adjusted image parameter for each step, wherein initiating further comprises using the stored adjusted image parameter during image acquisition.

15. (currently amended) A method for operating the ultrasonic diagnostic imaging system of Claim 1 to acquiring

acquire diagnostic ultrasound images of the heart comprising:
maintaining ~~a~~ the two-dimensional array probe-transducer
in contact with an acoustic window of a body to image a first
plane of the heart;
imaging a second plane of the heart by selective change
of the direction of beam steering ~~scanning with the plane~~
orientation control while maintaining the probe in contact
with the acoustic window;
storing information describing the orientation of the
first and second planes in the storage device;
introducing a contrast agent into the myocardium of the
heart;
acquiring a heart cycle waveform of the heart; and
acquiring images of the first and second planes of the
heart by use of the stored information and in synchronism with
the heart cycle waveform.

16. (original) The method of Claim 15, wherein acquiring
further comprises acquiring images of the first and second
planes during a single waveform.

17. (original) The method of Claim 16, wherein acquiring
further comprises acquiring another set of images of the first
and second planes a predetermined number of heart cycles
following the first acquiring of images.

18. (original) The method of Claim 15, wherein acquiring
further comprises acquiring an image from a different plane in
successive heart cycles.

19. (original) The method of Claim 15 further
comprising:

following the first acquiring of images of the first and
second planes of the heart, increasing the heart rate; and
following increasing the heart rate, acquiring for a

second time images of the first and second planes of the heart by use of the stored information and in synchronism with the heart cycle waveform.

20. (original) The method of Claim 16, wherein acquiring images of the first and second planes of the heart further comprises acquiring less than all of the scanlines of the first and second planes alternately until complete images of the first and second planes have been acquired.